

NAPA SANITATION DISTRICT

OVERVIEW

Established in 1945, the Napa Sanitation District (NSD) was created to provide for the collection and secondary treatment of wastewater for discharge into the Napa River for the City of Napa and unincorporated portions of southern Napa County. The District was formed at the request of the Napa County Board of Supervisors. Wastewater services commenced in the late 1940s following the construction of the Imola Treatment Plant. The District's operations were later expanded in the 1980s to include the treatment of wastewater for reclamation projects. The focus of this study is the District's reclaimed water services.

NSD's efforts to implement reclamation projects began with the need to find suitable alternatives for the storage and dry season discharge of treated wastewater into the Napa River. These efforts were prompted by new federal and state regulations relating to the treatment and discharge of wastewater. In 1972, the United States Congress passed the Federal Water Control Pollution Act. Referred to as the Clean Water Act, the law established water quality standards that were created in order to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The law included the mandate for a permit system known as the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into surface waters. That same year, the California Legislature amended the Porter-Cologne Water Quality Control Act of 1969, allowing the State Water Resources Control Board to assume the responsibilities prescribed in the Clean Water Act. This signified that the State Water Resources Control Board and its nine regional control boards would regulate federal and state water quality standards as well as operate the federal permit process for discharging pollutants into open waters.

In 1975, NSD reached a joint powers agreement with the American Canyon County Water District (ACCWD) that resulted in the Napa-American Canyon Wastewater Management Authority. ACCWD was the predecessor of the City of American Canyon and provided potable water and wastewater services in the unincorporated territory south of NSD's service area. The agreement established the terms and conditions by which NSD and ACCWD would coordinate the management of wastewater services within their respective service areas. Most notably, this agreement facilitated the construction of the Soscol Wastewater Treatment Plant (WTP) in 1978, an advanced treatment plant capable of meeting new federal and state treatment standards. The Soscol WTP provided both agencies with enhanced treatment facilities capable of providing restricted (secondary) recycled water that could be used for irrigation on non-domestic crops (i.e., pastures, orchards, and fodder). In 1994, the Napa-American Canyon Wastewater Authority was dissolved following the incorporation of American Canyon two years earlier. The dissolution agreement defined recycled water areas for NSD and American Canyon. Each agency agreed not to impair the other agency from selling or providing recycled water within their designated area. The recycled water areas defined in the dissolution

agreement matched earlier agreements and service practices between NSD and ACCWD. The agreement defines NSD's recycled water area as lands north of Fagan Creek as well as any lands south of Fagan Creek owned by Napa County for its airport operations, and any part of the Chardonnay golf facilities.

In 1983, NSD's reclamation program was prompted following a mandate by the San Francisco Bay Region – Regional Water Quality Control Board (RWQCB) for the District to establish a timeline for the expansion of its reclamation program. The mandate was issued in conjunction with RWQCB's notice that discharges into the Napa River would be restricted beginning in 1988. The restrictions would take effect during summer months when flow rates in the Napa River were not sufficient to minimize the impacts of discharged pollutants. By the end of the 1980s, the District had finished construction on two reclamation pipelines: the Kirkland Pipeline and the Kirkland Extension Pipeline. These pipelines allowed the District to begin conveying restricted reclaimed water from Soscol WTP to lands in southern Napa County for pasture irrigation. The Kirkland Extension also facilitated service to the Chardonnay Golf Course, the District's first paying reclaimed water customer.

In 1997, NSD completed the first of two planned capital improvement projects to the Soscol WTP. Referred to as "Phase I," this initial phase provided the District with improved and upgraded facilities necessary to raise the level of treatment at the Soscol WTP to tertiary. The move from secondary to tertiary recycled water was designed to expand the District's reclamation program due to tertiary's unrestricted use. The California Department of Health Services, under Title 22 of the California Code of Regulations, permits the use of tertiary recycled water for multiple uses. These uses can include irrigation of food crops, parks and playgrounds, golf courses, cemeteries, and certain industrial and commercial uses.

The following year, NSD reached a 20-year agreement with the City of Napa that permits the District to solicit and provide reclaimed water service within a specified area of the City's water service area. Referred to as the "reuse area," the agreement defines the District's recycled service area as lands east of the Napa River, south of Imola Avenue, west of Highway 221, and north of the City of American Canyon. The agreement also permits NSD to deliver reclaimed water to the Napa State Hospital, Stanley Ranch, and the South Napa Market Place. Reclaimed water service to any lands not included in the reuse area and within the City's water service area requires prior written approval by the City. The agreement provides NSD with exclusive rights to furnish reclaimed water within the City's water service area. NSD agrees to reimburse the City for the loss of potable water sales revenue in the event customers take delivery of recycled water in lieu of potable water from the City. NSD also agrees to furnish up to 50 acre-feet per year of reclaimed water to Kennedy Park and the Napa Valley College at no cost.

In April of 2002, NSD completed "Phase II" of the Soscol WTP capital improvement project. The improvements made to the Soscol WTP provided the District with enhanced treatment facilities, including an advanced solids handling system. The District is currently completing work on the construction of the Kennedy Pipeline. The Kennedy

Pipeline will allow the District to begin providing reclaimed water service to several entities inside the City of Napa's reuse area, including Kennedy Park and Golf Course and Napa Valley College. Completion of the Kennedy Pipeline is anticipated for 2003. Another prominent reclamation project anticipated to begin within the next few years includes service to commercial and industrial sites located within the Napa Valley Gateway Business Park. Lots developed within City's reuse area and the Napa Valley Gateway Business Park are required under the terms of their wastewater service agreement to take reclaim water when it becomes available.

In addition to expanding reclamation service into the City of Napa's reuse area and the Napa Valley Gateway Business Park, NSD maintains a contractual agreement to extend service to the Los Carneros Water District (LCWD). LCWD was created in 1978 for the specific purpose of entering into negotiations with the District for the delivery of reclaimed water for agricultural use in the Carneros region of Napa County. Although NSD and LCWD have signed two agreements over the past 25 years, a delivery system has never been constructed. The District's most recent agreement with LCWD was reached in 1995 and provided the framework for the Carneros Recycled Water Service Project. The District agreed to be responsible for the planning, financing, construction, operation, and maintenance of a delivery system that would provide reclaimed water service to property owners within LCWD. The implementation of the agreement, however, was contingent on the District reaching separate agreements with individual property owners within LCWD before beginning construction. Negotiations with three prominent property owners proved ineffective – the property owners wanted assurances from the District that they be allowed to terminate their agreements at their discretion. Unwilling to meet such conditions, the District suspended implementation of the Carneros Recycled Water Service Project and applied the money designated for LCWD to finance other reclamation projects. The District has maintained contact with LCWD to discuss the possibility of extending reclamation services to the Carneros region, but financing remains a key obstacle. It is estimated that the total cost to construct the facilities needed to provide reclaimed water service to the Carneros area is approximately 7.5 million dollars.

GOVERNANCE

NSD was organized under the County Sanitation District Act, Division Five, Part Three, Chapter Three of the California Health and Safety Code. The District's governing body is comprised of a five-member board of directors. The board includes a county supervisor, the mayor and a councilmember from the City of Napa, and two public members. The City Council of Napa and the Board of Supervisors appoint their own public member. A county supervisor also serves as an alternate board member. District operations can be financed through wastewater and reclaimed water service charges, assessments, lease or sale of property, and general obligation and revenue bonds.

NSD's board meetings are conducted on the first and third Wednesday of every month at the District's Soscol WTP's Administrative Office and are open to the public. Pursuant to the County Sanitation District Act (Health and Safety Code 4700 et. seq.), NSD is authorized to provide the following municipal services:

- The collection, treatment, and disposal of wastewater and related works, including sewage systems and treatment plants (HSC §4740-4741)
- The sale or disposal of any water which is the by-product of any district operations (HSC §4744)
- The construction, maintenance, and operation of a refuse transfer or disposal system (HSC §4741.1)
- Street cleaning and street sweeping services upon the roads and streets of the district (HSC §4742.5)
- The acquisition, construction, control, operation, and maintenance of waterworks for the production, treatment, storage, and distribution of water for domestic and/or other uses (HSC §4767)

NSD provides only the first two services listed above.

OPERATIONS

NSD's reclaimed water services are operated and maintained by its staff. The District is comprised of four departments: administration, collections, treatment, and technical services. A general manager is appointed to provide oversight and direction for all four departments. The general manager serves at will to the board. Designated staff is on call 24 hours a day, 7 days a week to respond to any reported emergencies. The District is currently comprised of 40 full time employees.

ADOPTED BOUNDARIES

NSD's adopted service area is comprised of 13 non-contiguous areas consisting of 12,448 acres. The District's service area includes the majority of incorporated territory of the City of Napa as well as unincorporated portions of southern Napa County. The District is under the land use of authority of two jurisdictions: the City of Napa and the County of Napa.

NSD – Adopted Boundaries	
District Boundary:	12,448 acres *
Sphere of Influence Boundary:	14,699 acres *

- * Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

RECLAIMED WATER SUPPLY

NSD's reclaimed water is generated from wastewater collected from the City of Napa and from unincorporated portions of southern Napa County. The amount of reclaimed water available for delivery is directly impacted by the amount of wastewater received and processed by the Soscol WTP. In 2001, Soscol WTP received approximately 3.045 billion gallons of wastewater (9,343 acre-feet).

NSD – Reclaimed Water Supply	
Available Wastewater Supply:	3.045 billion gallons

- * Amount of wastewater received by Soscol WTP in 2001

RECLAIMED WATER DEMAND

In 2001, NSD delivered approximately 724 million gallons of reclaimed water during non-discharge months (2,222 acre-feet). This resulted in an approximate daily average of 4.0 million gallons between May and October when discharge to the Napa River is prohibited by order of the San Francisco Bay – Regional Water Quality Control Board. Currently, the District provides reclaimed water services to seven locations: Jameson Canyon Ranch, Somky Ranch, Napa County Airport/Fagundos Ranch, Giles Vineyard, Chardonnay Golf Course, Kohnan, Inc., and CDI. Giles Vineyard, Chardonnay Golf Course, Kohan, Inc., and CDI are charged a usage fee for reclaimed water. Somky Ranch, Jameson Canyon Ranch, and Fagundos Ranch are all owned by the District. The Napa County Airport is leased from the County of Napa for recycled water and biosolid discharges.

NSD – 2001 Reclaimed Water Demand	
Reclaimed Water Demand:	724 million gallons *
Service Connections:	7

- * Represents reclaimed water production at Soscol WTP in 2001.

RECLAIMED WATER TREATMENT FACILITIES

NSD provides treatment of wastewater generated from the City of Napa and unincorporated portions of southern Napa County at the Soscol WTP.¹ Built in 1978, the Soscol WTP has a treatment capacity of 15.4 million gallons a day. The District maintains four adjacent oxidation ponds that encompass roughly 340 acres and provide approximately 1,700 acre-feet of storage capacity. In 1997 and 2002, the District completed two upgrades to the Soscol WTP. These upgrades raised the level of wastewater treatment at the Soscol WTP for reclamation uses to tertiary and created a reclaimed water reservoir. The Soscol WTP has a reclaimed water treatment capacity of 8.8 million gallons a day.

Treatment of wastewater at Soscol WTP is broken into two phases: wet season discharge and dry season discharge. Wet season discharge (November 1 through April 30) is comprised of primary and secondary treatment of wastewater before being discharged into the Napa River near Rattos Landing. Primary treatment begins as wastewater is cycled through a bar screen and grit chamber to remove large and small debris. Water is then emptied into two primary clarifiers allowing solids in the wastewater to settle. Secondary treatment commences as wastewater is removed from the clarifiers and processed either through an aeration basin before entering into a second line of clarifiers, or through the oxidation ponds followed by flocculation clarifiers. Treatment continues as wastewater is pumped into a chlorine contact basin. Once water has completed its chlorine contact time, water is dechlorinated before being discharged into the Napa River. During the dry season (May 1 through October 31) when discharge to the Napa River is prohibited, wastewater is provided tertiary treatment. Tertiary treatment requires an additional level of filtration following the completion of secondary treatment in order to meet Title 22 standards. These standards include meeting designated coliform and turbidity levels and a prescribed disinfection process. Moreover, recycled water is not dechlorinated.²

Soscol Wastewater Treatment Plant	
Wastewater Source:	City of Napa Unincorporated lands in Napa County
Wastewater Treatment Capacity:	15.4 million gallons per day
Reclaimed Water Treatment Capacity:	8.8 million gallons per day

¹ NSD's wastewater collection, treatment, and discharge operations are governed by California Regional Water Quality Control Board – San Francisco Bay Region Order No. 00-059.

² NSD's reclamation operations are governed by California Regional Water Quality Control Board – San Francisco Bay Region Order No. 96-011. This permit serves as a general permit for reclamation operations throughout the San Francisco Bay region.

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

NSD produces and distributes reclaimed water generated from the Soscol WTP. The District's reclaimed distribution system is comprised of the Kirkland and Kirkland Extension Pipelines. These pipelines convey tertiary reclaimed water stored and pumped from the Soscol WTP's reclaimed water reservoir to unincorporated portions of southern Napa County. A temporary pipeline is also available to convey reclaimed water to a leased portion of the Napa County Airport. This enables the District to discharge reclaimed water on an emergency basis and discharge biosolids annually. The reclaimed water reservoir has a usable storage capacity of approximately 6.5 million gallons.³

NSD – Reclaimed Storage Capacity	
Reclamation Reservoir	6.5 million gallons
TOTAL:	6.5 million gallons

RATE SCHEDULE

NSD charges a monthly reclaimed water usage fee based on the volume of water used in quantities of 1,000 gallons. The District does not charge an availability or connection fee for reclaimed water service.

NSD – Rate Schedule	
Water Usage Fee:	\$0.77 per 1,000 gallons *

* Adjusted annually in accordance to the Consumer Price Index.

FINANCIAL

NSD has an approved operating budget for 2002-2003 of \$10,439,992. This amount includes expenditures for the District's four departments: administration (\$6,945,328), collections (\$159,858), treatment (\$2,961,161), and technical services (\$373,645). Primary expenses include payroll, maintenance and operation costs, and insurance and licensing fees. The District's anticipated revenue for 2002-2003 is \$10,999,800. Revenue sources include wastewater service charges and interest from invested funds.

³ NSD is scheduled to complete construction on the Kennedy Pipeline in 2003. Once completed, the Kennedy Pipeline will serve Napa Municipal Golf Course, Kennedy Park, and Dey, Inc. Future improvements include extending Kennedy Pipeline to Napa Valley College and Napa State Hospital (NSH) as well as constructing a 5.0 million gallon reclaimed water storage tank behind NSH.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Napa Sanitation District's sphere of influence, and based on the above-mentioned information, the following written determinations are intended to fulfill the requirements of Government Code §56430. When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of Napa Sanitation District's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. The Napa Sanitation District's reclamation program is well-designed and has adequate capacity to meet existing service demands. The wastewater treatment plant's reclamation facilities can be expanded to meet additional capacity requirements as new users are brought on-line.
2. The Napa Sanitation District's Soscol Wastewater Treatment Plant produces tertiary-level treated wastewater. This level of reclaimed water offers the greatest range of beneficial uses, including agricultural, landscaping, industrial, wetlands maintenance and enhancement, and greenbelt preservation.
3. The Napa Sanitation District's reclamation program is a beneficial and efficient use of existing water resources by lessening the demand for potable water within its service area.

Growth and Population Projections:

1. The extension of reclaimed water service within Napa Sanitation District's service area will not induce growth beyond what is already planned for in the land use plans of the City of Napa and County of Napa.

Financing Constraints and Opportunities:

1. The Napa Sanitation District has an agreement with the City of Napa permitting it to solicit and provide reclaimed water service within a portion of Napa's water service area. As part of this agreement, the Napa Sanitation District is required to reimburse Napa for the loss of potable water sales revenue attributed to a customer's conversion to reclaimed water service. As Napa Sanitation District begins to extend reclaimed water service within this area, future studies should more fully examine the impact this arrangement has on the District's fiscal solvency.

Cost Avoidance Opportunities:

1. The Napa Sanitation District is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." The study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050, including the use of reclaimed water as an alternative source for agricultural, industrial, and irrigation customers. Napa Sanitation District will benefit from the study and should continually explore collaborative opportunities aimed at expanding its reclamation program for mutually beneficial uses.
2. Through the expansion of its reclamation program, the Napa Sanitation District will reduce the demand and cost for dry season storage.

Opportunities for Rate Restructuring:

1. The Napa Sanitation District is currently the only public agency providing tertiary-level reclaimed water service for a fee in Napa County. Accordingly, a rate comparison with other agencies in the County is not available.
2. The Napa Sanitation District's reclaimed water rates are adjusted according to the United States Department of Labor's Consumer Price Index. It is anticipated that rates will continue to incur marginal changes to match market conditions within the timeframe of this study.

Over the past five years, Napa Sanitation District's reclaimed water rates have increased approximately 2.6% (\$0.75 per 1,000 gallons to \$0.77 per 1,000 gallons).

Opportunities for Shared Facilities:

1. The Napa Sanitation District may have an opportunity to share costs and facilities with the City of American Canyon relating to the provision of reclaimed water service. American Canyon is scheduled to begin providing reclaimed water service by the end of 2003 following the completion of its first reclaimed water transmission line. Due to the close proximity of their service boundaries, this relationship may provide an opportunity for each agency to pursue cost efficiencies with one another, including the development of mutually beneficial reclamation projects.

2. The Napa Sanitation District and the City of Napa share resources relating to each agency's toilet retrofit program. Both agencies' programs are managed by a shared employee and offer incentives for constituents to replace their standard and low-flush toilets with ultra-flush toilets. This collaborative effort reduces the amount of wastewater needed to be collected and treated by Napa Sanitation District, while lessening the demand on Napa's potable water supply. This relationship facilitates cost efficiencies between both agencies and serves to encourage the efficient use of existing water resources within each agency's respective service area.
3. The Napa Sanitation District is a member of the North Bay Watershed Association, a stewardship organization comprised of several public water and wastewater agencies in Sonoma and Marin counties. This organization's objective is to identify and promote opportunities for the preservation and enhancement of the San Pablo Bay watershed. In addition to facilitating regional studies, this organization may provide a mechanism for the Napa Sanitation District to share in the costs of mutually beneficial reclamation projects throughout the North Bay.

The North Bay Watershed Association is currently examining the feasibility of developing a reclaimed water delivery system to convey treated wastewater from participating agencies in Marin, Sonoma, and Napa to flush out discarded salt ponds in southern Napa County. This reclamation project would serve two objectives: provide environmental enhancement of the abandoned salt ponds, and reduce the dry season storage requirements for participating agencies, including the Napa Sanitation District.

Government Structure Options:

1. The Napa Sanitation District is the only public agency providing reclaimed water service within its jurisdictional boundary. The City of Napa is the only other public agency empowered to provide reclaimed water service whose jurisdiction overlaps that of Napa Sanitation District. Under the terms of a 1998 agreement, the Napa Sanitation District is permitted to solicit and provide reclaimed water service within a specified portion of Napa's water service area; Napa has elected not to exercise its right to provide reclaimed water service. A jurisdictional-wide arrangement for the provision of reclaimed water service would enhance planning between both agencies and facilitate greater opportunities for the extension of reclaimed water service for beneficial uses.
2. There are several development projects planned for the Napa Valley Gateway Business Park and Napa County Airport area. It is anticipated that these developments, coupled with planned uses within the City of Napa's "reuse area," will create a significant increase in demand for reclaimed water service. Future studies should include an evaluation of these demands and their impact on Napa Sanitation District's reclamation capacity.

3. It is anticipated that the growing demand for reclaimed water for agricultural and landscaping purposes in southern Napa County will create a demand for outside user agreements with Napa Sanitation District. The extension of reclaimed water service outside Napa Sanitation District's jurisdictional and sphere of influence boundaries does not require the approval of LAFCO pursuant to Government Code Section §56133(e).
4. Due to the natural service relationships between the Napa Sanitation District and the City of Napa, opportunities for reorganization involving these agencies should be evaluated as part of a future study.

Evaluation of Management Efficiencies:

1. The Napa Sanitation District provides an annual summary of past and projected revenues and expenditures for its reclaimed water service operations as part of its annual budget. The budget is adopted following publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to reclaimed water service. In addition to enhancing the accountability of appointed representatives, the budget process provides a clear directive towards staff with respect to prioritizing district resources.
2. The Napa Sanitation District is currently in the process of completing major improvements to its reclamation program. These improvements include the development of the Kennedy Pipeline, which will make available reclaimed water service to current potable water customers within the City of Napa's "reuse area." Other projects planned for within the timeframe of this study includes the construction of a 5.0 million gallon reclaimed water storage facility to serve Napa's reuse area and the development of a reclaimed transmission line serving the Enterprise Court subdivision. These planned projects demonstrate a continued effort on behalf of management to identify and extend service to potential reclaimed water customers in a timely and efficient manner.
3. The Napa Sanitation District maintains an agreement with the Los Carneros Water District to provide the Carneros area with reclaimed water service for agricultural uses. The extension of reclaimed water service to the Los Carneros Water District area holds the promise of providing Napa Sanitation District with a beneficial use for its treated wastewater, while lessening the existing demand for groundwater and creek diversions in the Carneros region.
4. The Napa Sanitation District should make a concerted effort to determine the feasibility of providing reclaimed water service to the Los Carneros Water District under the provision of its current contract agreement.

5. The Napa Sanitation District's reclamation program is primarily financed through the collection of wastewater fees. Future studies involving Napa Sanitation District's wastewater operations should more fully examine its fiscal capacities.

Local Accountability and Governance:

1. The Napa Sanitation District's board meetings are conducted twice a month and are open to the public. Public inquiries involving its reclaimed water service operations can be addressed to the Board at this time. Regularly scheduled board meetings provide an opportunity for ratepayers to ask questions of their appointed representatives, while helping to ensure that service information is being effectively communicated to the public.
2. The Napa Sanitation District makes reasonable efforts to maintain public dialogue with its ratepayers regarding its reclaimed water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

These efforts include publishing a quarterly newsletter that includes information relating to its reclamation program. Ratepayers can also visit or call Napa Sanitation District's administration office during regular business hours to discuss questions regarding reclamation services and operations.

3. The Napa Sanitation District should enhance its public outreach efforts by developing a website that includes information relating to its wastewater and reclamation operations. In addition to posting dates and agendas for board meetings, the website should contain educational information relating to reclaimed water service, including allowable uses and availability.

Napa Sanitation District is currently in the process of developing a website: <http://napasanitationdistrict.com>. This website is expected to be available to the public in October, 2003.

4. As Napa Sanitation District's reclamation program expands, the District should appoint a designated employee or representative to administer and oversee its reclamation services.
5. The Napa Sanitation District's administration and reclaimed water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.